

Claims:

1. (Currently amended) Solid, freely flowing, fertilizer Fertilizer formulations comprising:

I) ~~a monobasic earth-alkali metal phosphate, chosen from among Calcium Phosphate (MCP) $\text{Ca}(\text{H}_2\text{PO}_4)_2$, Magnesium Phosphate (MMgP) $\text{Mg}(\text{H}_2\text{PO}_4)_2$, or mixtures thereof;~~

II) an alkali metal phosphate (MALP) AH_2PO_4 ; and

III) phosphoric acid Phosphoric Acid (PA) H_3PO_4 ,

wherein said monobasic earth-alkali metal phosphate is selected from the group consisting of calcium phosphate $\text{Ca}(\text{H}_2\text{PO}_4)_2$, magnesium phosphate $\text{Mg}(\text{H}_2\text{PO}_4)_2$, or mixtures thereof;

wherein A is selected from the group consisting of Na, K and NH_4 ; and

wherein during the processing of said formulations, said MALP reacts with said PA to form an alkali metal double salt $(\text{AH}_5(\text{PO}_4)_2)$.

2. (Currently amended) Fertilizer formulations according to claim 1, wherein said the alkali metal phosphate MALP is monopotassium phosphate Monopotassium Phosphate (MKP) KH_2PO_4 .

3. (Currently amended) Fertilizer formulations according to claim 1 ~~or 2~~, wherein a) said the alkali metal phosphate MALP is in a molar ratio to PA that is at least the ratio corresponding to the double salt $\text{AH}_5(\text{PO}_4)_2$.

4. (Currently amended) Fertilizer formulations according to claim 3 [[1]], wherein the ratio $\text{A}_2\text{O}:\text{P}_2\text{O}_5$, wherein the P_2O_5 does not comprise that included in phosphate moieties of the earth-alkali metal phosphates, is from about 0.50 to about 0.80.

5. (Currently amended) Fertilizer formulations according to claim 3 [[1]], wherein the molar ratio CaO and/or MgO to $\text{P}_2\text{O}_5\text{T}$, wherein $\text{P}_2\text{O}_5\text{T}$ comprises the total amount included in the formulations, is from 1:4.5 to 1:15.1 if the earth-alkali metal is calcium, and from 1:3.3 to 1:7.5 [[5]] if the earth-alkali metal is magnesium.

6. (Currently amended) Fertilizer formulations according to claim 5, wherein the molar ratio CaO and/or MgO to P_2O_5T , wherein the P_2O_5T comprises the total amount included in the formulations, is about 1:4.8 if the earth-alkali metal is calcium, and about 1:3.8 ~~[[5]]~~ if the earth-alkali metal is magnesium.

7. (Currently amended) Solid, freely flowing, fertilizer ~~Fertilizer~~ compositions comprising:

a monobasic earth-alkali metal phosphate, ~~chosen from among Calcium-Phosphate (MCP) $Ca(H_2PO_4)_2$, Magnesium-Phosphate (MMgP) $Mg(H_2PO_4)_2$, or mixtures thereof,~~ and an alkali metal double salt $AH_5(PO_4)_2$, wherein A is selected from the group consisting of ~~[[=]]~~ K, Na, NH_4 ; and wherein said monobasic earth-alkali metal phosphate is calcium phosphate $Ca(H_2PO_4)_2$, magnesium phosphate $Mg(H_2PO_4)_2$, or mixtures thereof.

8. (Previously presented) Fertilizer compositions according to claim 7, further comprising an alkali metal phosphate (MALP) AH_2PO_4 .

9. (Previously presented) Fertilizer compositions according to claim 7, wherein the alkali metal double salt is $KH_5(PO_4)_2$.

10. (Currently amended) Fertilizer compositions according to claim 8, wherein said the alkali metal phosphate MALP is monopotassium phosphate ~~Monopotassium Phosphate (MKP) KH_2PO_4 .~~

11. (Currently amended) Fertilizer compositions according to claim 7, ~~8 or 9~~, wherein the molar ratio of CaO and/or MgO to P_2O_5T , wherein the P_2O_5T comprises the total amount included in the compositions, is from 1:4.5 to 1:15.1 if the earth-alkali metal is calcium, and from 1:3.3 to 1:7.5 ~~[[5]]~~ if the earth-alkali metal is magnesium.

12. (Currently amended) Fertilizer compositions according to claim 11, wherein the molar ratio CaO and/or MgO to P_2O_5T , wherein the P_2O_5T comprises the total amount

included in the compositions, is about 1:4.8 if the earth-alkali metal is calcium, and is about 1:3.8 ~~[[5]]~~ if the earth-alkali metal is magnesium.

13. (Previously presented) Fertilizer compositions according to claim 11, wherein the molar ratio of MALP to $\text{AH}_5(\text{PO}_4)_2$ is from zero to 60%.

14. (Currently amended) Process for the preparation of the compositions of claim 7 ~~the invention~~, which comprises the steps of preparing a formulation according to any one of claims 1 to 6; introducing said formulation into a drying oven of a material resistant to the components of said formulation (particularly to the PA); and mechanically homogenizing said formulation while concurrently drying it by heating under a vacuum.